

Z/2 031

UNCLASSIFIED

PROCESSING DATE--198870

CIRC ACCESSION NO--AP0048521

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPLEX INVESTIGATION WAS CARRIED OUT OF DIFFUSION, SOLY., AND THE EFFECT OF CO ON THE ELEC. PROPERTIES OF SI. DIFFUSION HAS A COMPLEX DISSOCIATIVE CHARACTER. THE DIFFUSION COEFF. OF CO IN SI IS OF THE ORDER OF 10^{-16} CM² SEC AT 1000-1300DEGREES. SOLY. HAS A RETROGRADE CHARACTER WITH A MAX. OF 2 TIMES 10^{16} ATOMS-CM³ AT 1240DEGREES. CO IMPURITIES ARE PRESENT IN SI IN THE FORM OF ACCEPTORS AND CREATE 5 LEVELS IN THE FORBIDDEN BAND: E SUBV MINUS E SUBA1 EQUALS 0.10 PLUS OR MINUS 0.02 EV; E SUBV MINUS E SUBA2 EQUALS 0.30 PLUS OR MINUS 0.03 EV; E SUBC MINUS E SUBA3 EQUALS 0.22 PLUS OR MINUS 0.03 EV; E SUBV MINUS E SUBA4 EQUALS 0.37 PLUS OR MINUS 0.2 EV; AND E SUBV MINUS E SUBA5 EQUALS 0.52 PLUS OR MINUS 0.02 EV. CALC. WAS MADE OF THE LEVEL OF CHEM. POTENTIAL OF SI DOPED WITH CO, AND THE POSSIBILITY IS SHOWN OF OBTAINING COMPENSATED MATERIAL IN A BROAD INTERVAL OF CONCNS. OF CURRENT CARRIERS.

UNCLASSIFIED

USSR

UDJ 621.315.592

~~BAKHADYRZHANOV, N. K.~~, BOLTAKS, B. I., KULIKOV, G. S., PEDYASH, E. M., Institute of Semiconductors, Leningrad, Academy of Sciences USSR

"Diffusion, Solubility, and Electrical Properties of Zinc in Silicon"

Leningrad. Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 873-878

Abstract: The diffusion and solubility of zinc in silicon and its effect on the electrical properties of silicon were studied. It was established that the diffusion of zinc in silicon has complex dissociative nature, and the diffusion coefficient in the 1,100-1,300°C range varies from 10^{-7} to 10^{-8} cm²/sec. The life of zinc at a node and an internode of the silicon lattice calculated from the rise in concentration level with annealing time at 1,200°C is 10^4 and 10^{-3} sec, respectively. The solubility is of a retrograde nature with a peak at $1.5 \cdot 10^{-6}$ cm⁻³ at 1,270°C. Zinc introduces three acceptor levels in the forbidden zone of silicon. During the process of decay of the

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BAKHADYRKHANOV, M. K., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 873-878

zinc-silicon solid solution, two donor levels -- 0.1 ± 0.03 and 0.4 ± 0.03 eV -- obviously connected with the internodal zinc appear. The authors calculate the chemical potential level of silicon alloyed with zinc and demonstrate the possibility of obtaining the compensated material in a broad range of current carrier concentrations.

The conditions of obtaining silicon with a given specific resistance are calculated inasmuch as zinc in silicon is an acceptor and inasmuch as a compensated material can be obtained by introducing zinc into electronic silicon. The experimental data from the electrical measurements (carrier concentration, carrier mobility, specific resistance) before and after alloying the silicon with zinc and also for the control samples annealed without zinc are compared with the calculated data. It is noted that the concentration of electrically active zinc atoms is 10^3 orders less

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BAKHADYRZHANOV, M. K., et al. Fizika i Tekhnika Poluprovodnikov,
Vol 4, No 5, 1970, pp 873-878

than the solubility determined from radioactive measurements. A significant part of the zinc atoms apparently settle in the dislocations that occur, for example, for cobalt in silicon or they enter into the composition of electrically inactive complexes. The experimental data compare well with the calculated data except for converged samples, and it is assumed that these divergences are the result of incorrect calculations.

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1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PREPARATION OF UNSATURATED ALCOHOLS BY THE HYDROGENATION OF
ALPHA,BETA UNSATURATED ALDEHYDES IN THE PRESENCE OF AN IRIIDIUM CATALYST
AUTHOR--(05)-KHIDEKEL, M.L., BAKHANOVA, E.N., ASTAKHOVA, A.S.,
BRIKENSHTEYN, KH.A., SAVCHENKO, V.I.
COUNTRY OF INFO--USSR B
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 499
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROGENATION, IRIIDIUM, CATALYST, ALDEHYDE, FURAN, BENZENE
DERIVATIVE, ALCOHOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0625 STEP NO--UR/0062/70/000/002/0499/0499
CIRC ACCESSION NO--AP0119537
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119537

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PRESENCE OF IR CATALYST, UNSATD. ALDEHYDES, SUCH AS CH SUB2. CHCHO, MECH:CHCHO, PHCH:CHCHO, AND FURYLACROLEIN, ARE HYDROGENATED TO UNSATD. ALCS. IN 70-100PERCENT YIELDS. THE REACTION IS RUN AT NORMAL PRESSURE AND ROOM TEMP. THUS, 3 MILLIMOLLES PHCH:CHCHO IN 10 ML 96PERCENT ETOH WITH 0.5 G 5PERCENT IR-C GAVE AFTER UPTAKE OF 1 MOLAR EQUIV. H, 100PERCENT PHCH:CHCH SUB2 OH. A 2ND MOLE H WAS TAKEN UP AT A MUCH REDUCED RATE. THE CATALYST MAY BE REUSED REPEATEDLY. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CATALYTIC SYSTEM FOR HYDROGENATION OF UNSATURATED ALDEHYDES -U-

AUTHOR--(05)-KHIDEKEL, M.L., BAKHANOVA, E.N., ASTAKHOVA, A.S.,
BRIKENSHTEYN, KH.A., SAVCHENKO, V.I.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 164,352.
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL CATALYST, ORGANIC PHOSPHORUS COMPOUND, CHEMICAL PATENT,
HYDROGENATION, ALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0829

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136263

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136263

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE CATALYTIC SYSTEM
CONTAINS A CATALYST, AN VIII GROUP METAL, AND AN ACTIVATING ADDITIVE.
PHOSPHINES OF FORMULA $R \text{ PRIME}_1 \text{ SUBN } R \text{ PRIME}_2 \text{ SUMMNEGATIVE P}$, WHERE N
EQUALS 0-3, M EQUALS 0-3, AND R PRIME1 AND R PRIME2 ARE ALKYL OR ARYL
RADICALS, ARE USED AS THE ACTIVATING ADDITIVE. FACILITY: FILIAL
ORDENA LENINA INSTITUTA KHIMICHESKOY FIZIKA AN SSSR.

UNCLASSIFIED

Water Treatment

USSR

UDC 536.423.1:661.184

BAKHANOVA, R. A., SVETLAKOV, A. M., and SOLYANEK, YE. G., Scientific-Research Institute of Hydrometeorology, Kiev

"Determination of the Coefficient of Water Evaporation From a Flat Surface Covered with a Surfactant Film"

Moscow, Kolloidnyy Zhurnal, Vol 33, No 5, Sep-Oct 71, pp 642-644

Abstract: The effect of surfactants deposited on an evaporating surface on the evaporation rate of vapors was studied. The coefficient of water evaporation was determined from the temperature dependence of the evaporation rate of pure water and water covered with surfactants. The temperature range studied was 0-40°. When cetyl alcohol was used as the surfactant the coefficient of water evaporation was $6.8 \cdot 10^{-5}$, with a mixture of higher aliphatic alcohols ($C_{18}-C_{23}$) it dropped to $3.8 \cdot 10^{-5}$. A sharp change in the decrease of the evaporation rate due to surfactant films is observed with increasing water temperature. This is accounted for by the beginning of phase transition on the surface layer.

1/1

Aerosols

USSR

UDC 541.18.053:541.182.2/3:621.034

BAKHANOVA, R. A., SILAYEV, A. V., and SHIMANOVA, O. M., Ukrainian Hydro-meteorological Institute, Kiev

"Possibility of Degree of Dispersion in Atomization of Liquids with Low-Frequency Ultrasound"

Moscow, Kolloidnyy Zhurnal, Vol XXXIII, No 1, Jan-Feb 1971, pp 18-22

Abstract: Conventional concave-mirror type dispersers used in generating mists for simulated fog studies do not secure the optimal range of particle diameter, especially when the dispersed liquid is a colloidal system.

A dispersion device combining a low-frequency ultrasonic generator with an exponential ultrasonic concentrator equipped with a cap of porous material, was found to produce a significantly larger number of particles of optimal diameter for study with optical microscopes (1-5 μ).

With use of this equipment, probable aerosol particle diameter is only slightly dependent on the physico-chemical properties of the dispersed liquid, the nature of the porous cap, or the acoustic power and frequency,
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USSR

BAKHANOVA, R. A., et al., Kolloidnyy Zhurnal, Vol XXXIII, No 1, Jan-Feb 1971, pp 18-22

which factors, however, figure more largely in the "output" (concentration) of the artificial fog. Graphical data are included to illustrate the results of the tests.

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- 5 -

USSR

UDC 51.621.391

BAKHAR' F. N.

"Error Statistics in an Experimental Block"

Moscow, v sb. Peredacha diskretn. soobshch. po kanalam s gruppiruyushchimisya oshibkami (Discrete Information Transmission Along Channels with Grouped Errors -- collection of works), 1972, "Nauka," pp 86-93 (from RZh-Matematika, No 6, 1972, Abstract No 6V337)

Translation: Groups of errors detected in processing experimental data are considered. Such blocks, beginning and ending in errors and not containing a series of r or more zeros, are said to be experimental. A statistical model of the errors in such blocks is proposed, and their basic characteristics are investigated. To determine the fundamental quantities characterizing widely used in the experimental blocks. The computations showed that the error probability inside the block is practically independent of its length.
Author's abstract.

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USSR

UDC: 51:621.391

BAKHAR', E. M.

"A Generalization of the Hilbert Model"

Moscow, v sb. Peredacha diskretn. soobshch. po kanalam s gruppi-
ruyushchimisya oshibkami (Discrete Information Transmission Along
Channels With Grouped Errors--collection of works) 1972, "Nauka,"
pp 81-85 (from RZh--Matematika, No 6, 1972, Abstract 6V336)

Translation: Consideration is given to a mathematical model of errors in a symmetrical binary channel in three states forming a simple uniform Markov chain. The conditions under which some error sequence may be put in the form of different systems of groups or stages describable as a Hilbert model and its generalization are clarified. Several auxiliary probabilities, used for studying the statistical structure of errors in the stages, are described by the generalized model. Author's abstract

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USSR

UDC 519.2

BLOKH, E. L., BAKHAR', E. M.

"Problem of the "Success" Series for Repair Processes"

V sb. Peredacha diskretn. soobshch. po kanalam s gruppiruvushchimisya oshibkami
(Transmission of Discrete Messages over Channels with Grouped Errors -- collection of works), Moscow, Nauka Press, 1972, pp 134-139 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V5)

Translation: A study was made of the generalization of the known problem of the "success" series in a sequence of independent tests. The solution was found for the case where the sequence of "successes" is a binary recovery process. In these cases, the sequence of "successes" reflects the properties of the grouping of errors in the binary communications channel. A detailed study was made of the special case where the sequence of n tests does not contain the "success" series of length $r \geq 2$.

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USSR

UDC: 51:621.391

BAKHAR', E. M.

"Statistics of Errors in an Experimental Burst"

V sb. Peredacha diskretn. soobshch. po kanalam s gruppiruyushchimisya oshib-
kami (Transmission of Discrete Messages Over Channels With Grouped Errors--
collection of works), Moscow, "Nauka", 1972, pp 86-93 (from RZh-Kibernetika,
No 6, Jun 72, Abstract No 6V337)

Translation: Error bursts found in processing experimental data are con-
sidered. Bursts of this kind beginning and ending with an error and not
containing series of r or more zeros are called experimental bursts. A
statistical model is proposed for the errors as well as the bursts, and
their basic properties are studied. Extensive use was made of the method
of generating functions in determining the principal quantities which char-
acterize the statistics of errors in an experimental burst. Calculations
showed that the probability of an error within a burst is practically inde-
pendent of the length of the burst. Author's abstract.

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USSR

UDC: 51:621.391

BAKHAR', E. M.

"On a Generalization of the Hilbert Model"

V sb. Peredacha diskretn. soobshch. po kanalam s grupiruyushchimisya oshibkami (Transmission of Discrete Messages Over Channels With Grouped Errors--collection of works), Moscow, "Nauka", 1972, pp 81-85 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V336)

Translation: The paper deals with a mathematical model of errors in a binary symmetric channel which may be in three states forming a simple homogeneous Markov chain. Conditions are calculated where the same sequence of errors may be represented as different systems of bursts and chains described both by the Hilbert model and by its generalization. A number of auxiliary probabilities are introduced and used to study the statistical structure of errors in chains described by the generalized model. Author's abstract.

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USSR

UDC 621.357.7.035.4:669.245'779

AVEREUKH, M. YE., BAKHIDOV, R. S., and CHUMAKOVA, O. K.

"Electrolytic Precipitation of Nickel-Phosphorus Alloys in the Presence of Phosphoric Acid"

Alma-Ata, Khimiya i Khim. technol. (Chemistry and Chemical Technology) No 2, 1971, pp 147-154 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L390)

Translation: The effect of the initial pH of the electrolyte (0.85-1.8) and its concentration of phosphate ions (0-1.53 mole/l) on the electrodeposition of Ni-P alloys was examined. It was shown that with an increase in the pH, the VT_k [expansion unknown] of Ni and P increased, and H_2 decreased; the part of P in the cathode alloy for this was decreased and the microhardness of the alloy increased. The effect of the phosphoric acid is to buffer the electrolyte; the buffering capacity of the solution is increased with the addition of H_3PO_4 . Based on data of the overall VT_k of the cathode products, it was shown that at an initial pH 1.5, cathode Ni-P alloys were formed as a result of electrochemical processes. At a higher initial pH, there was a possibility of simultaneously reducing the Ni chemically.

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USSR

UDC 547.26'118

GERASIMOVA, S. S., BAKHITOV, M. I., and KUZNETSOV, YE. V.

"Addition of Dialkylphosphorous Acids to 3,5-Dibromo-2,4-toluylene Diisocyanate and 2,4,6-Trichloro-1,3-phenylene Diisocyanate"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1027-1028

Abstract: Dialkylphosphorous acids react easily with 3,5-dibromo-2,4-toluylene diisocyanate and 2,4,6-trichloro-1,3-phenylene diisocyanate in benzene or petroleum ether, triethylamine serving as a catalyst. The products are viscous liquids which crystallize on standing.

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BAKHIYA, G.N.

STRUCTURE AND PROPERTIES OF VERY PURE BORON CARBIDE

(Paper by L. A. BELYAKOVA, G. N. BAKHIYA, Sh. A. GOLAD, and Z. M. MIKALOV, Dnepropetrovsk, U.S.S.R. Institute of Chemistry and Control Tests for Fast Reactors, Russian, International Materials 1-3 June, 1973)

In this paper the results of an investigation of the properties of boron carbide obtained by magnesium-thermal reduction are presented. In this work it is demonstrated that the material is very pure with respect to chemical composition, the powder is characterized by a rounded shape of the particles; the compacted products have satisfactory thermophysical properties. The results of an investigation of the physical-chemical properties of the material (dispersity, density, specific surface, microhardness, mechanical properties for compression and weldability) are presented.

In distinction from other methods of the preparation of boron carbide powder, the magnesium-thermal method makes it possible to obtain very pure material of more accurate stoichiometric composition [1].

In this work, the basic characteristics of boron carbide powder obtained by means of magnesium-thermal reduction are considered, and the results of an investigation of certain properties of monolithic highly pure boron carbide are considered.

The boron carbide powder is distinguished for its high degree of purity. The chemical composition is given in Table 1.

USSR

BAKHUR, V. T.

"How Long Can a Person Go Without Sleep?"

Moscow, Priroda, No 10, 1971, pp 120-123

Abstract: The answer to the question in the title sent by a reader to the journal is that sustained deprivation of sleep is impossible without serious physiologic consequences, although some persons can go without sleep for over a week (the world's record, held by a Mexican student, is 264 hours). The daily requirement varies from individual to individual and in the same individual at different stages in his life. While some sleep is needed every day, the optimum amount required for maintenance of physical and mental fitness is still unknown. In discussing the physiology of sleep, the author briefly describes the humoral and nerve theories, including Pavlov's view of sleep as a form of protective inhibition, and the findings of Kleitman and others on the nature and significance of the two forms or phases of sleep, slow and paradoxical (or rapid).

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USSR

UDC 577.4

BAKHAREV, A. P.

"Synthesis of Minimal Networks From Threshold Elements"

V sb. Vopr. sinteza konechn. avtomatov (Problems in the Synthesis of Finite Automata — Collection of Works), Riga, "Zinatne", 1972, pp 47-54 (from RZh-Mekhanika, No 11, Nov 72, Abstract No 11V355)

Translation: The problem of constructing circuits from threshold elements containing a minimum number of elements is considered. A method is proposed in which a multithreshold element with the minimum possible number k of thresholds achieving a given function f is found, after which the representation of the function f in the form $\phi(f, \dots, f_k)$ is used, where f_1, \dots, f_k are functions which can be achieved with the threshold elements obtained from multithreshold settings of the thresholds. The same procedure is then applied to an external function ϕ , etc., until the threshold appears as the external function.

Abstracters Note. In the title of the paper and the annotation to it, it is clearly indicated that the method gives minimal circuits but, as it is easy

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USSR

BAKHAREV, A. P., Vopr. sinteza konechn. avtomatov, Riga, "Zinatne", 1972,
pp 47-54

to show, the circuit is not minimal for any function from the very beginning,
since it is not a threshold function, and for almost all functions the cir-
cuit is considerably more complex than the minimal. L. Sholomov.

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USSR

UDC: 577.4

BAKHAREV, A. T.

"Synthesis of Minimal Networks of Threshold Elements"

Vopr. Sintezy Konechn. Avtomatov [Problems of Synthesis of Finite Automata--Collection of Works], Riga, Zinatne Press, 1972, pp 47-54 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V355, by L. Sholomov)

Translation: The problem of construction of circuits of threshold elements containing the minimum number of elements is discussed. A method is suggested for determination of a multiple-threshold element with the minimum possible number of thresholds k , capable of realizing fixed function f , after which the representation of function f as $\phi(f, \dots, f_k)$, where f_1, \dots, f_k are the functions realized by the threshold elements produced from the multiple-threshold determination of thresholds is then used. Then, the same procedure is applied to the external function ϕ , etc., until the threshold function becomes the external function.

Abstractor's note. It is clearly stated in the title of this work and in its annotation that the method produces minimal circuits but, as we can easily prove, for any function which is not a threshold function at the outset, the

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USSR

Bakharev, A. T., Vopt. Sinteza Konechn. Avtomatov, Riga, Zinatne Press, 1972,
pp 47-54

circuit construction is not minimal, and for almost all functions the circuits
are significantly more complex than the minimal circuits.

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USSR

UDC: 621.385.6

BAKHAREV, V. A.

"A Device for Coupling a Coaxial Energy Tap to a Decelerating System of the Ladder and Ledge Type"

Moscow, Otkrytiya, Izobreteniya, Proizshlennyye Obrastoy, Tovarnyye Znaki, No 30, Oct 71, Author's Certificate No 317129, Division H, filed 27 Mar 70, published 7 Oct 71, p 191

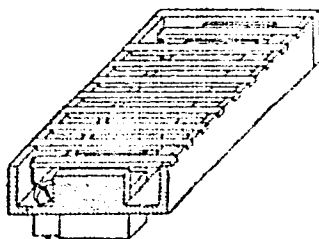
Translation: This Author's Certificate introduces a device for coupling a coaxial energy tap to a decelerating system of the ladder and ledge type. The device includes a capacitive tuning element located within the ledge of the ladder under the input rung, and a shorting jumper. As a distinguishing feature of the patent, the matching band is expanded and the VSWR is reduced by leaving a break between the input rung of the ladder decelerating system and one of the side walls and connecting the central conductor of a coaxial line to the free end of the rung. The input opening of the coaxial line is located in a recess in the ladder system under the free end of the input rung.

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USSR

BAKHAREV, V. A., USSR Author's Certificate No 317129



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USSR

UDC 530.161

B
~~BAKHAREVA, I. F., and BIRYUKOV, A. A., Saratov State University imeni~~
~~N. G. Chernyshevskiy~~

"Stochastic Theory of Nonlinear Nonequilibrium Processes"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 9, 1970,
pp 58-63

Abstract: On the basis of stochastic ideas concerning the character of the course of a nonequilibrium irreversible process, the authors previously obtained dynamic equations to determine the rate of a macroscopic process for the case of a single independent variable in the entire kinetic region, including the nonequilibrium part. The present article attempts to develop the formalism previously adopted by the authors for the case of nonnonlinear processes, with allowance for their interaction, as well as to generalize it for nonlinear vector processes (heat conduction, diffusion). The example of a cyclic chemical reaction in an ideal gas is considered.

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1/2 019 UNCLASSIFIED
TITLE--THERMOPLASTIC ADHESIVES -U-

PROCESSING DATE--20NOV70

AUTHOR--(05)-SOROKINA, N.S., KOTOV, M.P., KOVALENKO, R.V., MARCHENKO, L.N.
BAKHAREVA, L.T.

COUNTRY OF INFO--USSR

SOURCE--KGOZH. CBUV. PRCH. 1970, 12(2), 52-4

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--THERMOPLASTIC MATERIAL, ADHESIVE, FOOTGEAR, LEATHER, POLYESTER
RESIN, POLYAMIDE COMPOUND/(U)KTILOGL POLYESTER GLUE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1731

STEP NO--UR/0498/70/012/002/0052/0004

CIRC ACCESSION NO--AP0125352

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125352

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOOTWEAR INDUSTRY LEATHER GLUES, WITH VISCOSITIES OF 300-1500 P AND HARDENING TIMES OF 2-4 SEC. WERE PREPD. BY MODIFYING POLYMERS WITH LOW MOL. WT. COMPOS., E.G. BY THE ADDN. OF HEXAMETHYLENEADIPIAMIDE TO POLYAMIDES. MODIFIED POLYESTER GLUES (KTILOLS) WERE ALSO PREPD.

UNCLASSIFIED

1/2 013

UNCLASSIFIED

PROCESSING DATE--300CT70/

TITLE--GLUEING COMPOSITION --U--

AUTHOR--(05)--SOROKINA, N.S., KOTOV, M.P., MARCHENKO, L.N., KOVALENKO, R.V.,
SAKHAREVA, L.T.
COUNTRY OF INFO--USSR

SOURCE--USSR 265,346

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GLUE, CHEMICAL PATENT, ADHESION STRENGTH, LEATHER, POLYAMIDE
RESIN, ADIPIC ACID, HEXAMETHYLENE DIAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1460

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128359

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0126859

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GLUE WITH INCREASED ADHESION
TOWARD MOISTENED LEATHER HAS THE FOLLOWING COMPN. (IN WT.PERCENT):
POLYAMIDE RESIN 55-60, PLASTICIZER 1-6, STEARIC ACID 3.5-5.3 OR ADIPIC
ACID 3.5-10.5, CONDENSATION PRODUCT OF HEXAMETHYLENEDIAMINE AND ADIPIC
ACID 5-15, ROSIN 15-30, AND A STABILIZER 0.2-0.5. FACILITY: KIEV
TECHNOLOGICAL INSTITUTE OF LIGHT INDUSTRY.

UNCLASSIFIED

BAKHAREVICH, N. S.

Rigid Active Capsules
for Safety Explosives

TECHNICAL TRANSLATION

FSIC-RT-73-321-72

ENGLISH TITLE:

Rigid Active Capsules for Safety Explosives

FOREIGN TITLE:

Zhestkiye Aktivnyye Obolochki Dlya Predohranitel'nykh
Vzr.

AUTHOR:

N. S. Bakharevich, E. V. Posinkhenko, T. M.
Demidov

SOURCE:

Vzryvnoye Delo 1970, No. 6S/75, p 284-288

Translated for FSIC by

Albert L. Penbody
LHO BARNER ASSOCIATES, INC.

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USSR

UDC 681.325.66

^B
BAKHCHIEV, G. YA., and SAKYAN, E. A., Tbilisi Branch, All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev (Tbilisskiy filial vsesoyuznogo nauchno-issledovatel'skogo institute metrologii im. D. I. Mendeleyeva

"Device for the Comparison of Two n-Digit Binary Numbers"

USSR Author's Certificate No 258738, filed 20 Jul 68, Moscow, Otkrytiya Izobreteniya Promyshlennyye Obraztsy i Tovarnyye Znaki, No 1, Jan 70, p 130

Translation: A device for the comparison of two n-digit binary numbers which consists of a bit-by-bit "AND" circuit, the outputs of which through bit-by-bit "OR" circuits are connected to the outputs of bit-by-bit "NOT" circuits; two multi-output "OR" circuits; and output "AND" circuits is presented. Its special feature is the fact that for the purpose of simplification, the first and second inputs of the bit-by-bit "AND" circuits are connected to the corresponding bit-by-bit busbars of direct and inverse values of the compared numbers; the third inputs of the bit-by-bit "AND" circuits, with the exception of the "AND" circuit of the high-order bit, are connected to the outputs of the respective bit-by-bit "NOT" circuits, and the outputs of the bit-by-bit

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USSR

BAKHCHIYEV, G. YA., et al., USSR Author's Certificate No 258738.
filed 20 Jul 68, Moscow, Otkrytiya Izobreteniya Promyshlennyye Obratzsy
i Tovarnyye Znaki, No 1, Jan 70, p 130

"AND" circuit are connected with the inputs of the corresponding multi-input "OR" circuits, the outputs of which are connected to the first inputs of the first and second output "AND" circuits. Consequently, the second inputs of the output "AND" circuits are connected to the busbar of the interrogation signals. The first input of the third output "AND" circuit is connected to the output of the "NOT" circuit of the low-order bit of the compared numbers; the output of every bit-by-bit "OR" circuit of the high-order bit is connected to the input of the corresponding bit-by-bit "OR" circuit of the lower-order bit.

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Immunology

USSR

MIRZAAKHMEDOV, T. P., MIRISMAILOV, M. I. and BAKHIMOVA, F. I., Tashkent
Scientific Research Institute of Vaccines and Sera

"Some Immunological Shifts During Rabies Vaccination"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, 1972, pp 76-77

Abstract: The effect of rabies vaccination on the dynamics of formation of specific virus-neutralizing antibodies and of autoantibodies to liver, spleen and brain was studied in healthy rabbits. The passive hemagglutination reaction, Nikolaev's method of fractionating the "unprecipitated antigen-antibody" complex and neutralization reactions in white rats were used to measure antibody levels. It was found that autoantibodies began to appear on day 7, peaked on day 21, diminished by day 30 and were rarely detectable on day 37. The specific virus-neutralizing antibodies appeared on day 7, increased markedly between days 14-21 and reached maximal titers by days 30-37.

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1/2 062 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--HIGH TEMPERATURE GRAPHITE RADIATOR FOR THE INFRARED SPECTRAL REGION
-U-
AUTHOR--(02)-BAKHIR, L.P., LEVASHENKO, G.I.
COUNTRY OF INFO--USSR *B*
SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, JAN. 1970, PP 173-176
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INERT GAS, GAS PRESSURE, IR SPECTRUM, GRAPHITE, HIGH
TEMPERATURE EFFECT, RADIATION INTENSITY, HEAT RADIATION, TEMPERATURE
DEPENDENCE, FLAME TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FILE/FNAME--1979/1612 STEP NO--UR/0358/70/012/000/0173/0176

CIRC ACCESSION NO--AP0047934
UNCLASSIFIED

2/2 052

UNCLASSIFIED

PROCESSING DATE--12SEP70

CIRC ACCESSION NO--AP0047934

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A GRAPHITE RADIATOR WITH A RADIATIVE CAPACITY OF 0.99 OPERATING AT TEMPERATURES UP TO 3200 DEG K IN THE SPECTRAL REGION FROM 0.5 TO 15 MU. THE RADIATOR IS INTENDED FOR MEASUREMENTS OF RADIATIVE CAPACITIES AND FLAME TEMPERATURES AND HAS THE FORM OF A HOLLOW GRAPHITE CYLINDER WITH A LONGITUDINAL SLOT. THE RADIATING ELEMENT USED IN THE RADIATOR IS HEATED BY A DIRECT CURRENT IN A COMPRESSED INERT GAS. IT IS FOUND THAT THE LIFE TIME OF THE SYSTEM CAN BE SUBSTANTIALLY EXTENDED BY INCREASING THE PRESSURE OF THE INERT GAS. THE TEMPERATURE DEPENDENCE OF THE LIFE TIME OF THE RADIATING ELEMENT OF THE RADIATOR IS DETERMINED AT CONSTANT PRESSURE OF THE INERT GAS.

UNCLASSIFIED

USSR

UDC 669.295.41

SEREBRYAKOVA, A. V., LEBEDEV, G. N., STARSHENKO, V. I., BAKHIREVA, L. D.

"Studies on Obtaining Titanium Tetrachloride Purified from Vanadium"

Tr. In-ta metallurgii. Ural'sk. fil. AN SSR (Works of the Institute of Metallurgy. Urals Branch of the USSR Academy of Sciences), 1970, vyp. 22, pp 23-27 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G231)

Translation: Purification of $TiCl_4$ with respect to V is possible in a condensation system by introducing H_2 , S or H_2 and S simultaneously. Purification is most complete with a S to H_2 ratio close to stoichiometric for H_2S . At a temperature of 200° , the interaction of $VOCl_3$ takes place with the formation of $VOCl_2$, and at 500° , with the formation of $VOCl$. The article contains 1 illustration, 4 tables, and an 8-entry bibliography.

- END -

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CSO: 1842-W

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USSR

UDC: 577.1:615.7/9

BAKHISHEV, G. N.

"Effect of Cysteine on the Concentration of Some Functional Groups of Proteins Under Conditions of Acute Intoxication by Methyl Bromide"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Pesticides -- Sanitary Measures in Using, Toxicology, and the Poison Clinic--collection of works), vyp. 9, Kiev, 1971, pp 261-264 (from BZh-Biologicheskaya Zhurniya, No 6, Mar 72, Abstract No 6F2133)

Translation: Methyl bromide poisoning of rats caused a reduction in the concentration of sulfhydryl and carboxyl groups and an increase in the concentration of amino groups in amino acids in blood serum and liver tissue (protein), its non-protein fraction). Injecting poisoned animals with cysteine (1) prevented reduction of the concentration of sulfhydryl groups of proteins and non-molecular compounds, showing little effect on the change in concentration of carboxyl and amino groups. A possible mechanism is considered for the protective action of L. H. Cysteine.

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USSR

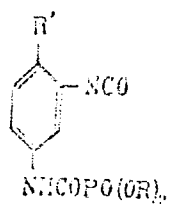
UDC: 547.241.07

BAKHITOV, M. I., KUCHNETSOV, N. V., MIRGAZIZOVA, R. A., Kazan Institute of Chemical Technology named S. M. Kirov

"A Method of Producing Phosphorus-Containing Isocyanates"

Moscow, Obkrytiya, Izobreteniya, Promyshlennyye Otkrytiya, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 270090, Class 12, filed 2 Jun 69, p 2.

Abstract: This Author's Certificate introduces: 1. A method of producing phosphorus-containing isocyanates of the general formula



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USSR

BAKHITOV, M. I., et al, Otkrytiya, Izobreteniya, Promyshlennyye
Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 276690,
Class 12, Filed 2 Jun 69, p 24

where R and R' are alkyls by interacting organophosphorus compounds with isocyanates in an organic solvent with subsequent isolation of the goal product by conventional methods. As a distinguishing feature of the patent, the product yield is increased by using dialkylphosphorous acids as the organophosphorus compounds and toluylene diisocyanate as the isocyanates, and carrying out the process in the presence of a catalyst. 2. A modification of this method distinguished by the fact that metallic sodium is used as the catalyst. 3. A modification of this method in which the process is carried out with the application of heat to 50-60°C.

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1/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ADDITION OF DIALKYL PHOSPHONIC ACID TO
TRIS,P,ISOCYANATOPHENYL,METHANE -U-
AUTHOR-(03)-BAKHITOV, M.I., KUZNETSOV, YE.V., KOKINA, G.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 570-1

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, ORGANIC ISOCYANATE, PHOSPHONIC ACID, BENZENE
DERIVATIVE, ORGANIC PHOSPHORUS COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0939

STEP NO--UR/0079/70/040/003/0570/0571

CIFC ACCESSION NO--AP0124599

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0124599
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO A 20PERCENT SOLN. OF (P,DCNC
SUB6 H SUB4) SUB3 CH IN C SUB2 H SUB4 CL SUB2 WAS ADDED SLOWLY 0.042
MOLE (RO) SUB2 PHO CONTG. ITS NA SALT WAS CATALYST, (EXOTHERM) AND THE
MIXT. HEATED 1 HR AT 60DEGREES TO GIVE ON ADDN. OF DRY ET SUB2 O HC(C
SUB6 H SUB4 NHCCPO(OR) SUB2) SUB3 (R SHOWN): ME, M. 138-9DEGREES; ET,
M. 148-9DEGREES; PR, M. 141-2DEGREES; ISO-PR, M. 144-5DEGREES; BU, M.
150-1DEGREES; AND ISO-BU, M. 151DEGREES. THE IR SPECTRUM WAS SHOWN FOR
THE ET MEMBER. FACILITY: KAZAN. KHIM.-TEKHNOL. INST. IM.
KIROVA, KAZAN, USSR.

UNCLASSIFIED

Acc. Nr: **AP0051936**

B Ref. Code: **UR0219**

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i
Meditsiny, 1970, Vol **69**, Nr **2**, pp **115-117**

DEPENDENCE OF THE NATURE AND DEGREE OF LESION OF THE NERVE
CELLS IN THE NUCLEUS CUNEATUS OF THE MESENCEPHALON RETICULAR
FORMATION ON THE CHARACTER OF THEIR BLOOD SUPPLY

I. V. Gannushkina and L. M. Bakhitova

Institute of Neurology, Academy of Medical Sciences of the USSR, Moscow

560 nerve cells of the mesencephalon reticular formation (200 visual fields) in 10 cats were studied in the periphocal region of the cerebral softening caused by ligating the lamina quadrigemina artery.

It was demonstrated that the types of lesion of large nerve cells are, under these conditions, more pronounced than those of the medium and small cells. The authors connect these differences with the character of the cells vascularization.

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USSR

BAPTIZMANSKIY, V. I., BAKEMAN, N., DMITRIYEV, Yu. V., PROSVIRIN, K. S.,
SHEVELEV, V. V., YANKELEVICH, Ya. P., PODGORODETSKIY, A. A.

"The Problem of the Use of Coagulators During Deoxidation of Steel by Aluminum"

Moscow, Izv. Vuzov, Chernaya Metallurgiya, No 2, 1971, p 51-55.

Abstract: Analysis of the hydrodynamic and thermodynamic factors shows the possibility of using secondary large particles as coagulators for the products of deoxidization of steel with aluminum. The introduction of crushed lime, feldspar, and aluminum to the center mass during deoxidization in the process of siphon pouring of seven-ton ingots of type 3 kp steel was tested. Studies of rolled products produced from these ingots confirmed experimentally the possibility of reducing the level of contamination of the steel with stable nonmetallic inclusions by combined introduction of deoxidizers and coagulators.

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USSR

UDC: 536.46:533.6

OSVETINSKIY, S.A., KICHIN, YU.S. and BAKHMAN, N.N.

"Combustion of Solid Fuel in Gas Oxidizer Flow"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 (11-th All-Union Conference on Problems of Evaporation, Combustion and Gas Dynamics of Dispersion Systems, 1972), 1972, p 40 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B980)

Translation: Combustion of polymethyl-metacrylate with additions of urotropin, hexyl and copper needles in flow of oxygen was investigated. Tests were conducted with cylindrical specimens of $d_n = 8$ mm original inside diameter, 70 mm length made by compacting the mixture polymethylmetacrylate powder with additions. The oxidizer flow density ρ_w varied from 10 to 40 gr/cm²sec. The combustion chamber pressure was 5-70 atm.

It is shown that by adding hexyl and copper needles to the fuel it is possible to control the effect of pressure and oxidizer flow density on the speed of gasification.

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USSR

UDC 621.43.011:533;621.5:533

ALBADAYEV, L. I., BAKHMAN, N. N.

"Certain Characteristics of the Burning of Organic Liquids and a Layer of Powder"

V sb. 11-ya Vses. konf. po vopr. ispareniya, goreniya i gaz. dinamike dispersn. sistem, 1972 (11th All-Union Conference on Problems of Evaporation, Combustion and Gasdynamics of Disperse Systems, 1972 -- Collection of Works), Odessa, 1972, p 43 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B419)

Translation: The results of a study of the rate of burning of a liquid from a layer of powder are presented. It was found that the dispersion of the powder and the viscosity of the fuel have an effect on the rate of burning. A physical explanation of these results is proposed. T. A. Girshovich.

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USSR

UDC 629.7.036.54-66.536.46

OSVETINSKIY, S. A., KICHIN, YU. S., and BAKHMAN, N. N.

"The Combustion of a Solid Fuel in a Stream of Gaseous Oxidant"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 -- Sbornik (11-th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972 -- Collection of Works), 1972, p 40 (from Referativnyy Zhurnal -- Aviatsionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1.34.144 Resume)

Translation: A study was made of the combustion of polymethylmethacrylate (PMMA) with additives of urotropine, hexogen, and copper needles in a stream of gaseous oxygen. The experiments were conducted on cylindrical specimens with an initial internal diameter of $d_H = 8$ mm and a length of about 70 mm, obtained by pressing mixtures of powdered PMMA with the additives. The flow density of the oxidant (pv) varied from 20 g/cm² sec to 40 g/cm² sec. The pressure in the combustion chamber was 5 -- 70 physical atmospheres. It was shown that by means of the introduction of hexogen and copper needles into the fuel as additives, it is possible effectively to change the relationship of the gasification rate to the pressure and density of the oxidant flow.

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USSR

UDC 536.46

SHIROKOV, B. F., and BAKHMAN, N. N. (Moscow)

"Burning Rate of a Fuel Plate in Contact With a Solid Oxidizer Layer"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 8, No 2, Jun 72, pp 247-252

Abstract: The article measures the shape of the recess in polymethyl methacrylate and polystyrene plates burning in contact with KClO_4 at elevated pressures ($p = 5 \div 30$ atm). Besides the pressure, the oxidizer layer density was also varied. The charge was a steel cuvette in which only the front wall was made of polymethyl methacrylate or polystyrene. The experiments were staged in a constant-pressure bomb in a nitrogen atmosphere. After a given time interval the pressure in the bomb was sharply reduced (at the rate of $\sim 4 \cdot 10^3 \div 10^4$ atm/sec) and the charge extinguished. The charge quenching device was analogous to the one developed by V. N. MARSHAKOV, except that the diameter of the channel in the relief valve was considerably increased (to 48 mm). The recess profile, burning angle, rate of burning (gasification) of a fuel

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USSR

SHIROKOV, B. F., and BAKHMAN, N. N., Fizika Goreniya i Vzryva, Vol 8, No 2, Jun 72, pp 247-252

plate in the stream of a gaseous oxidizer, and the structure of the recess surface are considered. Kinetic factors play the determining role near the flame "nose," while at rather a great distance from the "nose" the combustion apparently is purely diffusion.

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Catalysis

USSR

UDC 541.128.12.13

BAKHMAN, N. N., LOBANOV, I. N., MARGOLIS, L. Ya., NIKIFOROV, V. S., and
SAKHAROV, M. M., Institute of Chemical Physics, Acad. Sc., USSR, Moscow

"Heterogeneous-Homogeneous Catalysis in the Combustion of Mixture Systems"

Moscow, Doklady Akademii Nauk SSSR, Vol 202, No 5, Feb 72, pp 1107-1110

Abstract: Combustion rate of condensed mixture systems may be increased 2-2.5 fold by addition of small amounts of compounds of iron, chromium, copper, silicon, and other elements. Many of these compounds are known catalysts for deep oxidation of hydrocarbons and ammonia. It has been proposed that the entire mixture or at least considerable portion of it reacts at the surface of catalyst particles. To check this proposition, a theoretical calculation was derived for the rate of the catalyzed reaction. From theoretical considerations the conclusion was reached that a heterogeneous-homogeneous catalytic process takes place. Active products are formed on the surface of the catalyst particles, the active products even at low concentrations increase considerably the homogeneous reaction rate. Support for the heterogeneous mechanism of catalysis during combustion is found in the relationship between the combustion rate and the catalyst

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USSR

BAKHMAN, N. N., Doklady Akademii Nauk SSSR, Vol 202, No 5, Feb 72, pp 1107-1110

concentration. The effectiveness of the catalyst increases only at low concentrations. Further support for this mechanism rests on the fact that with small additions of the catalyst either an acceleration or inhibition of the combustion may occur -- a phenomenon impossible to explain by the reaction of the mixture on the surface of catalyst particles.

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USSR

UDC 536.46 + 662.222.2

BRAGINSKIY, V. I., BAKIMAN, N. N., Moscow

"The Anomalous Dependence of Combustion Rate on Pressure for Mixtures of Ammonium Perchlorate with Certain Organic Fuels"

Fizika Goreniya i Vzryva, No 1, Mar 71, pp 57-61.

ABSTRACT: A study was made of the dependence of combustion rate u on pressure p for model mixtures of APC of about 5μ particle size with a number of organic acids with various ratios between components. A series of experiments was also performed with large-particle APC (90-250 μ fractions) with adipic and succinic acids. The acids were ranged in sequence of increasing maximum combustion rate. The higher the pressure, the lower the percentage of fuel at which the maximum combustion rate is achieved for each mixture. With sufficiently high fuel content, a plateau was observed on the curves of $u(p)$, or sectors were observed where the rate of combustion decreased with increasing pressure. An explanation is suggested for the experimental data, based on concepts of the zone of influence.

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1/2 041 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--COMBUSTION RATE ACCELERATION WITH THE AID OF ADDITIONS FORMING A
MOLTEN LAYER ON THE SURFACE OF THE CHARGE -U-
AUTHOR-(03)-BAKHMAN, N.N., TSYGANOV, S.A., ZAKHAROV, V.B.
COUNTRY OF INFO--USSR
SOURCE--FIZIKA GORENIIA I VZRYVA, VOL. 6, MAR. 1970, P. 98-102
DATE PUBLISHED----MAR 70
SUBJECT AREAS--MATERIALS, PROPULSION AND FUELS
TOPIC TAGS--METHYLMETHACRYLATE, AMMONIUM PERCHLORATE, STYRENE, COMBUSTION
RATE, POTASSIUM CHLORIDE, LITHIUM FLUORIDE, PROPELLANT ADDITIVE, SOLID
PROPELLANT COMBUSTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605017/FQ1 STEP NO--UR/0414/70/006/000/0098/0102
CIRC ACCESSION NO--AP0140765
UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--04DEC

CIRC ACCESSION NO--AP0140765

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MOTION PICTURE OBSERVATIONS SHOWING THAT THE COMBUSTION RATES OF AMMONIUM PERCHLORATE MIXTURES WITH POLYSTYRENE AND POLYMETHYLMETHACRYLATE CAN BE INCREASED BY SMALL KCL AND LIF ADDITIONS WHICH FORM A MOLTEN LAYER ON THE SURFACE OF THE CHARGE. THE EFFECTS OF THE FUEL OXIDIZER RATIO, THE SIZE OF THE PARTICLES, THE AMOUNT OF ADDED KCL OR LIF, AND PRESSURE ON THE COMBUSTION RATES ARE DISCUSSED. IN THE PRESENCE OF EXCESS OXIDIZER, KCL AND LIF ADDITIONS ARE FOUND TO INCREASE THE COMBUSTION RATES OF THESE MATERIALS UP TO THREE TO FOUR TIMES, AND THIS EFFECT IS GREATER WHEN THE ADDITIONS ARE FINER DIVIDED. A THEORETICAL EXPLANATION IS PROPOSED FOR THE RESULTS.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CRYSTALLIZATION OF CAST IRON -U-
AUTHOR--(02)-KUMAROV, O.S., BAKHMAT, V.A.
COUNTRY OF INFO--USSR *B*
SOURCE--LITEINOE PROIZVOD. 1970, 2, 31-2
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--CAST IRON, METAL CRYSTALLIZATION, METALLOGRAPHY, ALLOY
COMPOSITION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1375 STEP NO--UR/0128/70/002/000/0031/0032
CIRC ACCESSION NO--AP0116824
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0116324

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF TEMP. TIME CURVES AND METALLOGRAPHIC ANAL. AT DIFFERENT STAGES OF THE CRYSTN. PROCESS HAVE BEEN CARRIED OUT TO DET. THE INFLUENCE OF STRUCTURE MODIFYING ADDNS. ON THE CRYSTN. RATE OF A CAST IRON (C 3.87, SI 0.99, MN 0.2, S 0.043, P 0.085, CR 0.11PERCENT). ADDNS. OF AL, BI, SB, S AND C HAVE BEEN INTRODUCED IN AMTS. OF 0.01-0.4 WT.PERCENT. THE CRYSTN. RATE CAN DIFFER FROM THE RATE OF HEAT REMOVAL. IN PARTICULAR THE PRESENCE OF ELEMENTS PROMOTING THE NUCLEATING AND ACCELERATING THE GROWTH OF GRAPHITE (AL AND SMALL ADDNS. OF CE) NARROWS THE GAP BETWEEN CRYSTN. AND HEAT TRANSFER RATES. TEMP. RISES AND CRYSTN. ENDS SOONER. ADDNS. HAMPERING THE GROWTH OF GRAPHITE COLONIES (BI, SPHEROIDIZING ADDNS. OF CE) HAVE AN OPPOSITE EFFECT. SOME ADDNS. ARE NEUTRAL WITH RESPECT TO GRAPHITE GROWTH (SB). EXPIS. WITH S ADDNS. SHOW THAT THE CRYSTN. TIME OF THE AUSTENITE GRAPHITE EUTECTIC IS DETD., OTHER FACTORS BEING CONST., BY THE RATE OF GRAPHITE FORMATION.

UNCLASSIFIED

Acc. Nr:

AP0049856

Abstracting Service:

CHEMICAL ABST. 5-76

Ref. Code:

4R 0365

103220n Corrosion resistance of metallic materials during the fluorination of aqueous solutions of polynitro compounds. Bakmutova, G. B.; Senichev, Yu. N.; Akishina, M. A.; Bocharova, N. A. (USSR). Zashch. Metal. 1970, 6(1), 42-3 (Russ). The corrosion resistance of a no. of metals such as simple steel, stainless and special steels, Cu and its alloys, and Al alloys, was investigated in media where the process of $CF(NO_2)_3$ prepn. was proceeding by fluorination with elementary F of 20% aq. solns. of $HC(NO_2)_3$ or $NaC(CO_2)_3$ as well as in pure $CF(NO_2)_3$. Corrosion of the metal samples was studied, in exit gases in the liq. as well as the vapor phase. The highest corrosion rate was noted in $HC(NO_2)_3$, lower in $NaC(NO_2)_3$, and in $CF(NO_2)_3$ soln. all the metals were very stable. Corrosion was much more intensive in the vapor phase, the main corrosive factors being H_2F_2 and F. The introduction into solns. of $NaHCO_3$, which binds the nonreacted F, significantly reduced corrosion, esp. in the vapor phase. J. Liskowacki

REEL/FRAME

19801781

USSR

UDC: 51:155.57:681.3.06

BAKHMUTOVA, I. V.

"The 'Forel'-5 B' Program for the BESM-6 Computer"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 45, Novosibirsk, "Nauka", 1971, pp 31-40 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V1016)

Translation: A program is described for separating a set of points given by binary codes into taxa with a predetermined degree of proximity within a taxon, and also for finding the code of the center of a set of points and the maximum "radius". Each tag may be assigned a certain weight in the form of a decimal number. The initial data are retained.

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USSR

UDC: 51:155.001.57:681.3.06

BAKHMUTOVA, V. N.

"The 'Forel'-1' Program for the BESM-6 Computer"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 45, Novosibirsk, "Nauka", 1971, pp 8-13 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V1014)

Translation: The paper describes the "Forel'-1" program for isolating taxa (regions of bunching) of points with a given degree of proximity by using hyperspheres. The program access is given as well as the method of assigning the initial data and a control example.

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Hematology

USSR

BAKHUTSKIY, N.

"Blood and Blood Substitutes"

Moscow, Voennoye Znaniya, No 2, Feb 70, pp 37-38

Abstract: A popularized account of the importance of blood and blood transfusions in the treatment of various diseases and pathological conditions is given. Since the indications for the use of blood and its components are steadily increasing and the supply is comparatively limited, considerable effort has been directed toward developing blood substitutes from animal blood, casein, and other products. Three main types are now available: those intended to stimulate the blood flow, detoxifying agents, and substances used for parenteral nutrition. In case of warfare involving the employment of weapons of mass destruction, these preparations will undoubtedly be widely administered in the comprehensive therapy of traumatic shock and burns, acute blood loss and radiation.

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BAKHRAKH, L.D.

SO. JPRS 59985
7 SEP 73

(8)

UDC 621.396.623:523.164

PARAMETERS OF THE RT-22 KVAO RADIO TELESCOPE ANTENNA AT
WAVELENGTHS OF 3 AND 1.35 CENTIMETERS

Article by ~~the author~~ M.I. Gerasimov, V.A. Efremov, L.R. Kogan, V.I. Kostenko, L.I. Nizovskiy, A.G. Shchegolev and V.B. Zhukov, Institute of Space Research of the USSR Academy of Sciences, Moscow, *Izvestiya Vsesoyuznogo nauchno-issledovatskogo tsentra Akademii Nauk SSSR*, No 5, 1973, submitted 1 July 1972, pp 575-579.

A two-reflector antenna system in the 3-centimeter wave band was developed in 1968 in order to improve the RNC (Radio Astrophysical Observatory) RT-22 radio telescope [1] and, to provide maximum sensitivity, it was tuned and its basic technical parameters at 3.34 centimeters were determined. In developing the illuminating system of the KVAO's RT-22, the operating experience of the FIAN-2 [2] (Physics Institute Lenin P. N. Lobachev of the USSR Academy of Sciences) RT-22 was considered and certain changes in its system parameters were introduced: the diameter of the secondary reflector D₂ = 1,500 millimeters, and the system's secondary focus was chosen as 200 millimeters from the vertex of the paraboloid with a view to insuring minimal losses in the millimeter waveband. These circumstances limited the longitudinal dimension of the irradiation in the 3-centimeter wave band. The two-reflector irradiation has a comparatively small longitudinal dimension, which is why it was chosen. Its scheme was tried out on an analogous antenna, the FIAN RT-22 [2], and gave satisfactory results.

The radiation patterns of the two-reflector irradiation in the E and H planes and the cross-polarization characteristics at the 3.34 centimeter wavelength are shown in Figure 1. The irradiation's dispersion coefficient, computed per the radiation pattern, does not exceed $\beta = 0.2$.

Preliminary tuning of the antenna was done on the sun, final tuning on radio sources of small angular size. A radometer with a parametric amplifier was used in tuning at the

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USSR

UDC 621.396.677.833.3

BAKHRAKH, L. D., KARAPETYAN, K. Ye.

"On Calculation of Two-Reflector Antennas"

Izv. AN ArmSSR. Fizika (News of the Academy of Sciences, Armenian SSR. Physics), 1971, 6, No 1, pp 26-33 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7B68)

Translation: The authors consider problems of the applicability of the method of "beam treatment" (the concept of rays, Snellius' laws, the girder principle, etc.) to the investigation of fields. The function $f(\vec{k}_0, \vec{H}_0, \Delta\psi)$ is introduced, which is zero when \vec{k}_0, \vec{H}_0 satisfy the eikonal equation. A two-reflector parabolic antenna is considered. The small reflector of the antenna is calculated by the wavefront method. This reflector must provide correction for diffraction fringe effects. A numerical example is presented for calculation of such a correcting reflector. A study is made of the field reflected from the small correcting reflector in a two-reflector antenna for applicability of beam treatment to the reflector. Three illustrations, two tables, bibliography of one title. Resumé.

1/1

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USSR

UDC 538.311.621. 396. 671.001.24

BAKHPAKH, L. D., and KARAPETYAN, K. YE., Armenian Division of Radiophysical Measurements, All-Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements

"Calculation of Two-Reflector Antennas"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR, Vol 6, No 1, 1971, pp 26-33

Abstract: The article considers questions of the applicability of the concept of geometrical optics (the concept of rays, Fermat's principle etc.) to electromagnetic fields. The functional $f(\vec{E}_o, \vec{H}_o, \nabla \psi)$ is introduced which, given \vec{E}_o, \vec{H} satisfying the eikonal equation, is identically equal to zero.

A two-reflector parabolic antenna is considered in which the small reflector corrects for edge diffraction loss. A numerical example is given of the calculation of such a correcting reflector by the wave front method on a "Razdan 2" computer or by solving an ordinary differential equation of the first

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USSR

BAKHRAKH, L. D., and KARAPETYAN, K. YE., Izvestiya Akademii Nauk Armyanskoy SSR, Vol 6, No 1, 1971, pp 26-33

order. It is shown that the ray interpretation is applicable to fields reflected by the small reflector and the method of wave fronts and differential equations is applicable to the calculation of reflectors which correct edge diffraction.

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USSR

UDC 621.375.826:772.99

BAKHRAKH, L.D., MAKEYEV, V.A., FRIDMAN, G.KH.

"Preparation Of Holographic Matched Filters In Systems Using Ultrasonic Light Modulator"

V sb. Ispol'z. optich.kvant.generatorov v sovrem.tekhn. i med. Ch.2-3 (Use Of Lasers In Contemporary Technology And Medicine. Parts 2-3--Collection Of Works), Leningrad, 1971, pp 64-67 (from Rzh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A462)

Translation: Equipment is described which makes it possible to perform both preparation of matched filters and optical processing of signals (pattern identification). An ultrasonic coil is used as a light modulator, with six emitters immersed in distilled water. The emitters are excited from a standard signal generator at a frequency of 10 MHz. The converting lens of the reference channel has a focal length $F = 150$ mm, and an aperture $D = 20$ mm. The converting lens of the signal channels have, respectively, $F = 600$ mm and $D = 70$ mm. A LG-75 laser in a one-mode regime serves as the light source. It is possible

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USSR

BAKHRAKH, L. D. et al, V sb. Ispol'z. optich.kvant.generatorov v
sovrem.tekhn. i med. Ch.2-3, 1971, pp 64-67 (From RZh:Elektronika
i yeye primeneniye, No 2, Feb 72, Abstract No 2A462)

to attain optimum selectivity of the system by changing the frequency characteristic of the filter. The system has great sensitivity to transverse shifts and to a change of the signal parameters. In view of the fact that for preparation of the filter only one of the diffraction orders of the signal spectra is used, the size of the filter even with a longfocused optice ($F = 600 \text{ mm}$) amounts to $< 1 \text{ mm}^2$. This makes it possible to record a larger number of the filters on one area of the photorecording medium. The theoretical development and a scheme of the unit are given. 1 ill. 5 ref. L.K.

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USSR

UDC: 51

BAKHRAKH, V. P., RABINOVICH, M. G.

"Comparative Characteristics of Some Methods of Constructing
a Basis Plan of a Distributive Problem in Linear Programming"

Tr. Leningr. inzh.-ekon. in-ta (Works of the Leningrad Engi-
neering Economics Institute), 1972, vyp. 91, p 3-11 (from
RZh-Kibernetika, No 8, Aug 72, Abstract No 8V530)

[No abstract]

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USSR

UDC: 51

BAKHRAKH, V. P.

"Mathematical Methods in Planning and Control of Production. Part 1. Machine Building, Radio Electronics, Instrument Making. A Collection of Situational Problems in Optimization With Practical Content. No 1"

Matematicheskiye metody v planirovanii i upravlenii proizvodstva. Ch. 1. Mashinostroyeniye, radioelektronika, priborostroyeniye. Sbornik Situatsionnykh zadach optimizatsii s prakticheskim soderzhaniyem. Vyp. 1-v. Mezhotrasl. in-t povysheniya kvalif. spets. nar. kh-va LatvSSR (cf. English above. Intersectoral Institute for Improving Skill in National Economic Specialization), Riga, 1971, 135 pp, ill. 32 k. (from RZh-Kibernetika, No 5, May 72, Abstract No 5V470)

Translation: A textbook. Description of 43 practical problems ("situations") which are to be modeled by problems of linear programming.

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USSR

UDC: 621.319.4

BAKHRAKH, V. P., TRONIN, A. L.

"Determining the Optimum Granulometric Composition of Tantalum Powder for K-52-2 70 V \times 150 μ F Capacitors by the Method of Linear Programming"

Elektron. tekhnika. Nauch.-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 4(21), pp 45-54 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V324)

Translation: The authors present an example of using the method of linear programming to solve the problem of determining the optimum granulometric composition of tantalum powder in the production of K-52-2 capacitors.
Resumé.

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USSR

UDC 576.851.49.097.22:615.332 (STREPTOMYCINUM)

TARANENKO, T. M., VEYNELAT, V. I., BAKHRAKH, Ye. E., MALININA, Z. Ye.,
ORLOVA, L. S., and ANDREYEVA, I. P., All-Union Mikrob Antiplague Institute,
Saratov

"Comparative Characteristics of Somatic Polysaccharides Isolated From Strain
EV and Its Streptomycin-Resistant Variant"

Moscow, Antibiotiki, Vol 18, No 3, 1973, pp 213-216

Abstract: Chemical and immunochemical comparisons were made of the lipopoly-
saccharide (LPS) and the main somatic antigens (MSA) isolated from the vaccine
strain EV N11EG of the *P. pestis* (I), and its nonimmunogenic streptomycin
resistant variant EV Str^r61 (II). The cells were grown on a solid nutrient
medium for 48 h at 28°, and the antigenic preparations were obtained from
acetone-dried cells. MSA was obtained by extraction with trichloroacetic
acid, purified on a column of Biogel P-200, and MSA-containing fractions sel-
ected on the basis of serologic reactivity and absorption at 280 nm. LPS was
isolated by water-phenol extraction; phenol was removed by dialysis and MSA
and nucleic acids by gel filtration on a Sepharise 2B column. For sugar
analyses LPS and MSA were hydrolyzed with H₂SO₄, and the monosaccharides
identified by thin-layer chromatography on silica gel. Infrared (IR) spectra
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USSR

TARANENKO, T. M., Antibiotiki, Vol 18, No 3, 1973, pp 213-216

were used for the detection of lipids. MSA was found to be present in greater quantities in I than in II, and in both cases lipids were absent. MSA isolated from I and II contained glucose, galactose, and glucosamine; however, twice as much glucosamine was present in MSA derived from I than in that derived from II, while more galactose was present in the MSA derived from II than in that from I. In addition, MSA isolated from II also contained mannose, and a sugar with an R_f value close to that of fucose. Gel precipitation with equine antiplague serum and the first component of MSA showed that the titer of the preparation derived from I was 2.5 times as great as that of the preparation from II. No significant chemical differences were found between LPS derived from I and II; both preparations contained virtually identical amounts of reducing substances (about 19%), glucosamine (2-2.5%), and limited quantities of proteins and nucleic acids. IF spectra for both preparations were virtually indistinguishable. The obtained data indicate that streptomycin does not affect the LPS component of the *P. pestis* cell wall, but alters the metabolic processes involved in the formation of MSA.

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USSR

UDC 576.851.45.097.2

BAKHRAKH, Ye. B., BOROVIKOVA, T. P., VEYNBLAT, V. I., DAL'VADYANTS, S. M., and
TARENENKO, T. M., All-Union "Mikrob" Plague Research Institute

"Characteristics of Somatic Antigens of Pasteurella pestis"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1972,
pp 101-105

Abstract: Chemical analysis of the main somatic antigen of Pasteurella pestis showed that it does not contain lipid A or the sugars characteristic of the central polysaccharide-aldoheptose and ketodesoxyoctanate. The monosaccharides present include galactose, glucose, glucosamine, mannose, and rhamnose. Fractionation of the main somatic antigen on Sephadex G-75 results in 2 components. One consists mostly of protein and a small quantity of nucleic acids and a polysaccharide. The other contains not only proteins but all the sugars present in the original antigen. The polysaccharide-containing haptene is regarded as the lateral O-specific chain of a liposaccharide.

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USSR

UDC 615:373.3:576.851.45].011.5

TARANENKO, T. M., BAKHRAKH, Ye. E., ANDREYEVA, I. P., and BOROVIKOVA, T. P.,
"All Union Scientific Research Antiplague Institute, "Mikrob", Saratov

"Significance of Certain Functional Groups in the Biological Activity of Pestin
PP"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71,
pp 134-137

Abstract: It is generally believed that the activity of allergens used for various diagnostic tests is associated with alpha-amino groups and with the phenol groups of cyclic amino acids. This study was performed to investigate the role of free amino groups and cyclic amino acids in the allergenic properties of pestin PP -- a preparation recommended for detecting immuno-allergic shifts in patients with plague. Formalinization, acetylation, and iodination of pestin PP obtained from plague vaccine strain EV considerably reduced the allergenic activity of the preparation, while deamination completely abolished this activity. These results indicate that the allergenic activity of pestin PP is associated with both free amino groups and phenol groups in aromatic amino acids.

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USSR

Bakhrakha, L. D., Samoylenko, V. I. M. (ed.)

"Nonlinear and Superhigh-Frequency Radio Engineering Systems"
(Nelineynye I Sverkhvysokochastotnye Radiotekhnicheskiye Sistemy)

Moscow, 1970, Izd-vo Mashinostroyeniye, 2,300 copies, 332 pages

ABSTRACT: This collection of articles discusses the general theory of nonlinear oscillator systems, their application, and analyses the characteristics of nonlinear elements, nonlinear pulse circuits, and various antenna devices.

The possible application of subharmonic generators for null units (phase discriminators) in analogue-digital converters is analysed.

The development and the basics of the operating theory of superhigh frequency diodes of switching devices are given and the properties of "thinned" antenna arrays is presented. There are 22 tables, 168 illustrations, and 102 citations.

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USSR

BAKHRAKHA, L. D., et al, Izd-vo Mashinostroyeniye, 2,300 copies, 332 pages

The contents of the book are as follows:

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A Method of Solving Nonlinear Second Order Differential Equations for An Automatic System With Small Nonlinearity, N. A. Milyayev	5
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On the Independent Quadrature Components of a Subharmonic In a Parametron With Balanced-Modulation Pumping, A. Z. Strukov, A. G. Khatuntsev	83

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USSR

BAKHRAKHA, L. D., et al, Izd-vo Mashinostroyeniye, 2,300 copies, 332 pages

Analog-Digital Converters Employing Subharmonic Oscillation Generators,
G.P. Vechkanov 99

Statistical Properties of Some Basic Parameters of D901 Silicon
Varicaps and Their Influence On the Output Characteristics of
Capacitive Parameterons, N. A. Milyayev, N. P. Russkikh, N. A.
Mishchenko 116

The Effect of Wideband Noise On Amplitude Radio Pulse Logic
Elements, I. I. Gurova 135

On the Operation of Nonlinear Systems With Two Hysteretic Zones
For the Amplitudes of High-Frequency Oscillations, N. A. Milyayev 142

Nonlinear Properties of A Transistor Input Circuit With Automatic
Shift, V. I. Samoylenko, G. A. Bogdanova 150

Differential Permeability of Real Thin Ferromagnetic Films,
V. A. Puzryev, E. M. Zlochevskiy 160

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USSR

BAKHRAKHA, L. D., et al, Izd-vo Mashinostroyeniye, 2,300 copies, 332 pages

- Analytical Method for Solving Dynamic Equations of Thin Ferromagnetic Films For Slow Switching Fields, E. G. Dadyan, N. V. Obukhov 166
- Unijunction Transistors and Their Possible Applications, A. K. Grebnev, A. I. Krivonosov, Vi. I. Ruslanov 173
- Study of A Generator of A Linearly Changing Voltage With Current Stabilizing Two Pole of MOS Unitrons, V. K. Stroyu 183
- The Effect of the Parameters of A Trigger Signal On the Pulse Duration of A Free-Running Multivibrator Using Tunnel Diode, O. P. Nazarov 199
- A Microwave Switch On Thin Ferromagnetic Film, V. A. Puzyrev, Yu. I. Voloshchenko 206

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USSR

BAKHRAKHA, L. D., et al, Izd-vo Mashinostroyeniye, 2,300 copies, 332 pages

A Study of Antennas With Frequency Beam Scanning, D. B. Zimin,
V. S. Losev 217

Concerning the Distortions of Spiral Antenna Radiation Characteristics,
F. L. Ayzin 254

Calculation and Design of Diode Switching Devices In the Decimeter
Range, G. F. Vasil'yev, Yu. A. Yevdokimenko, V. N. Ginzburg 265

A Study of Some Characteristics of Diode Switching Devices of the
Decimeter Range, G. A. Bukhonina, G. F. Vasil'yev, V. A. Galkovskiy,
I. Ye. Gol'berg, V. N. Ginzburg 284

Thinned Antenna Arrays With Small Side Lobes, V. V. Sazonov, V. P.
Yakovlev 310

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USSR

UDC 621.372.061

BAKHRAKHA, L. D., SAMOYLENKO, V. I. (Editors)

Nelineynyye i sverkhvysokochastotnyye radiotekhnicheskiye sistemy. 2. Sb. statey. (Tr. Mosk. aviats. in-ta, vyp. 215) (Nonlinear and Superhigh Frequency Radiotechnical Systems. 2. Collection of Articles. (Works of Moscow Aviation Institute. vyp. 215)), Moscow, Mashinostroyeniye Press, 1970, 332 pp, ill., 2r. 7k (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A103K)

Translation: The general theory of nonlinear oscillatory systems and application of the systems are investigated. The characteristics of the nonlinear elements, the pulsed nonlinear systems and various antenna devices are studied. The possibility of applying subharmonic oscillators as the zero element (phase discriminator) in analog-to-digital converters is analyzed. The development experience and the fundamentals of the theory of operation of diode superhigh frequency commutation devices are discussed; the properties of "sparse" antenna arrays are investigated. There are 168 illustrations, 122 tables and a 102-entry bibliography.

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USSR

TADZHIEV, Sh. K. and BAKHRAMOV, S., Chair of Propedeutics of Children's Diseases, Tashkent Medical Institute and Uzbek Scientific Research Institute of Pediatrics

"Antierthrocyte Autoantibodies during Typhoid Fever in Children"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 6, 1970, pp 33-34

Abstract: While it is generally believed that the anemia which develops in children with typhoid fever is due to a toxic inhibition of the hemotopoietic bone marrow, the possible formation of autoantibodies which destroy circulating erythrocytes was investigated. The study was done on 62 typhoid patients aged 1.5 to 15 years. The presence of antierythrocyte autoantibodies was analyzed by the method of partial precipitation of the nonprecipitating antigenantibody complex, with the use of chloroform extracts of antigens obtained from O(I)Rh₀ blood donors. The tests were done at three different stages of the disease: beginning (3rd-6th day), climax (10th-14th day), and prior to discharge from hospital. The results revealed the presence of antierythrocyte autoantibodies in 42 children, while the reaction was negative in the other 20 children. At the onset of the disease, the antibody titer was 1:50-1:200, erythrocyte concentration was 3.1-4.6 million per cubic millimeter, and hemoglobin concentration was 54-81%. At the height of the disease, the antibody titer was around 1:800, the erythrocyte count was 2.5-3.9 million, and hemoglobin concentration was 45-66%. Prior to discharge (on the 19th-21st day after

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USSR

TADZHIYEV, Sh. K and BAKHRAMOV, S., Meditsinskiy Zhurnal Uzbekistana, No 6, 1970, pp 33-34

body temperature returned to normal) the antibody titer decreased to 1:50-1:100, the erythrocyte count increased to 3.35-4.51 million, and hemoglobin concentration rose to 59-76.8%. This correlation between the titer of antierythrocyte autoantibodies and the severity of anemia in children with typhoid fever indicates that these antibodies play a definite role in the pathogenesis of anemia in typhoid fever.

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USSR

UDC 517.944

BAKSHALIYEV, Ya. R.

"Investigating the Weakly Generalized Solution of a Self-Conjugate, Mixed Problem for a Class of Quasi-Linear, Second-Order Hyperbolic Systems With a Nonlinear Operator as the Right-Hand Member"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSR -- Seriya Fiziko-tekhnicheskikh i Matematicheskikh Nauk, No 4, 1972, pp 57-64

Abstract: The following mixed problem is considered in this article:

$$\frac{\partial^2 u}{\partial t^2} - \frac{\partial}{\partial x} \left[A(x) \frac{\partial u}{\partial x} \right] + B(x)u = F(u(t, x)), \quad (1)$$

$$u(0, x) = \varphi(x), \quad u_t(0, x) = \psi(x),$$

$$u(t, 0) = u(t, \underline{1}) = 0,$$

1/2

USSR

BAKHSHALIYEV, Ya. R., Izvestiya Akademii Nauk Azerbaydzhanskoy SSR -- Seriya Fizikotekhnicheskikh i Matematicheskikh Nauk, No 4, 1972, pp 57-64

where $0 \leq t \leq T$, $0 \leq x \leq 1$, $0 < T$, and $1 < +\infty$. $A(x)$ and $B(x)$ are real, symmetrical matrices of the m -th order; $A(x)$ is continuously differentiable in $[0, 1]$, is positively determinate, and has various eigenvalues in $[0, 1]$; $B(x)$ is nonnegative and continuous in $[0, 1]$; $\varphi(x)$ and $\psi(x)$ are specified m -dimensional vector functions in $[0, 1]$; F is generally a nonlinear operator; and $u(t, x)$ is the m -dimensional vector function to be sought.

2/2

- 5 -

BAKHSI - ZADE

PLEASE SEE

BAKHSIZADE

Acc. Nr:

AP0048377

Abstracting Service:

Ref. Code:

INTERNAT. AEROSPACE ABST 5-78 UR 0293

A70-24301 # Choice of optimal moments of independent trajectory measurements (Vybór optimal'nykh momentov nezavisimyykh traektornykh izmerenii). B. Ts. Bakhshiiian. *Kosmicheskie Issledovaniia*, vol. 8, Jan.-Feb. 1970, p. 37, in Russian.

Consideration of the problem of a priori selection of the composition of uncorrelated measurements ensuring an optimally accurate prediction of a given parameter of a space vehicle trajectory. An effective method of solving this problem, based on results obtained by Lidov (1964), El'iasberg and Bakhshiiian (1969), and Ershov (1970), is proposed. It is shown that the measurement composition thus determined ensures a prediction of optimal accuracy even for the poorest correlation between the measurement errors.

A.B.K.

REEL/FRAME

19800085

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CHOICE OF OPTIMAL STRATEGY OF DEFINING ORBITS -U-
AUTHOR-(02)-BAKHSHIYAN, B.TS., ELYASBERG, P.YE. *B*
COUNTRY OF INFO--USSR
SOURCE--AVTOMATIKA I TELEMEXHANIK, 1970, NR 3, PP 16-24
DATE PUBLISHED-----70

SUBJECT AREAS--SPACE TECHNOLOGY
TOPIC TAGS--ORBIT CALCULATION, ARTIFICIAL SATELLITE ORBIT, COMPUTER
CALCULATION

CONTROL MARKING--NO RESTRICTIONS
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CIRC ACCESSION NO--AP0106305
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0106305

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF A PRIORI SELECTION OF A SET OF PARAMETERS WHICH ARE BEING DETERMINED AND MEASURED, PROVIDING AN OPTIMAL IN ACCURACY PREDICTION OF A SPECIFIED, DEPENDING ON SPACECRAFT TRAJECTORY VALUE, IS CONSIDERED. FOR THE CASE OF WORST CORRELATION BETWEEN MEASUREMENT ERRORS A COMPLETE SOLUTION OF THE STATED PROBLEM IS OBTAINED AND AN EFFICIENT CALCULATION ALGORITHM IS DEVELOPED. FOR THE CASE OF UNCORRELATED MEASUREMENTS IT IS SHOWN THAT FOR A GIVEN SET OF PARAMETERS WHICH ARE BEING DETERMINED THE OPTIMAL CONTENT OF PARAMETERS WHICH ARE BEING MEASURED CONCIDES WITH THE CORRESPONDING CONTENT FOR THE CASE OF WORST CORRELATION BETWEEN MEASUREMENT ERRORS.

UNCLASSIFIED

USSR

UDC 535.37 + 539.196

ARISTOV, A. V., BAKHSHEYEV, N. G., KUZIN, V. A., and PETERSKAYA, I. V.

"Effect of Orientational Intermolecular Relaxation on Stimulated Emission Spectra of Organic Phosphors"

Leningrad, Optika i Spektroskopiya, Vol 30, No 1, Jan 71, pp 143-147

Abstract: The article suggests a method for a controlled decrease in the mean time spent by molecules in an excited state (t_f) by intensification of stimulated radiative deactivation of excited molecules in a generation mode. The value of t_f is a direct functional of the pump level. This opens up the possibility of reducing the lifetime of excited molecules by intensification of radiative transitions, which differs fundamentally from the method of increasing the probability of radiationless deactivation, and opens up new avenues for the interpretation of

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USSR

ARISTOV, A. V., et al., Optika i Spektroskopiya, Vol 30, No 1,
'Jan 71, pp 143-147

certain spectroscopic and generational phenomena as well as for obtaining new information on the properties of molecules and molecular systems. The new method was used by the authors to study the relationship between the position of the generation spectrum maximum and the extent to which the pump power of the second harmonic of a neodymium giant pulse exceeds the threshold power in glycerol solutions of 3-dimethylamino-6-monomethyl-amino-N-methylphthalimide in a -65 to $+35^{\circ}$ C temperature range. The results confirm the fact that orientational intermolecular relaxation in relaxation times commensurable with the mean time spent by phosphor molecules in an excited state has the same effect on the character of luminescence spectra variation both in a spontaneous and in a stimulated regime. In a subsequent article the authors

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USSR

ARISTOV, A. V., et al., Optika i Spektroskopiya, Vol 30, No 1,
Jan 71, pp 143-147

'intend to consider the effect of translational intermolecular relaxation on generation spectra.

The authors thank V. I. SHIROKOV and T. V. VESELOVA for fluorometric measurements of τ_f (mean lifetime of molecules in excited singlet state in a spontaneous emission mode).

3/3

Acc. Nr.

AP0049964

Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code

4R0051

105519r Intermolecular interactions and spectra of molecules in multicomponent solutions. II. Spectroscopic method for studying the composition of solvate shells of molecules. ~~Bakhshiev, N. G.; Volkov, V. P.; Altaiskaya, A. V. (USSR). Opt. Spektrosk. 1970, 28(1), 51-7 (Russ).~~ Quant. study of the compn. of solvate shells was carried out in the following systems: polar org. compd. (3-aminophthalimide, 4-amino-N-methylphthalimide)-nonpolar solvent (*n*-hexane; or *n*-heptane)-polar solvent (BuOH). The concn. of both solvents varied in the range 0-100%. Shifts in the absorption bands and fluorescence lines corresponding to electronic transitions are characteristic for the solvate effects and were, therefore, studied. Competition occurring between the polar and nonpolar solvent mols. to enter the 1st coordination sphere gives rise to local isolated areas of mol. structures different from the structure of the whole system. One solvent is expelled from the solvate by the other only if the newly formed structure is energetically more favorable. The theoretical considerations led to the derivation of a math. treatment that could use spectral data for the estn. of some phys. properties of the solvate shell (local dielec. const., compn.). H. Parizkova

1/1

REEL/FRAME
19801902

7 14

Acc. Nr:

AP0049967

Abstracting Service:
CHEMICAL ABST. 5170

Ref. Code:

4R0061

94911j Role of fluctuation processes in the broadening of electron-vibrational absorption bands of molecules in liquids and solutions. Bakhshiev, N. G.; Sverdlova, O. V. (USSR). *Opt. Spektrosk.* 1970, 28(1), 177-8 (Russ). The influence of dispersion interactions on longwave electron absorption spectrum of C_6H_6 was studied. The linear correlation between the width $\delta(\Delta\nu)_{1/2}$ of the C_6H_6 band in pentane, water, hexane, MeOH, Freon 113, EtOH, Me₂CO, cyclohexane, and CCl₄ solns. and liq. C_6H_6 on the position of ν_{max} of this band was found. The slope of the correlation straight line was: $\tan \alpha = 0.6$. The remaining components (in addn. to the electron-vibrational components) changed in the same manner. The value was in accord with the results from ir spectra of a row of mols. in the liq. phase ($\tan \alpha = 0.6-0.7$), which proved the same mechanism of the broadening of electron-vibrational and vibrational bands. The fluctuation nature cannot be attributed to those spectral bands the width of which is detd. by intramol. factors (cf. B. S. Neporent, 1951). J. Vachek

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19801905

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ALEKSEYEVA, T. A., BAKSHIYEVA, G. E., DOLADUGINA, V. S., Candidate of Chemical Sciences, and KULIKOVA, I. I.

"The Dependence of the Index of Refraction of Quartz Glass Upon the Method of its Production"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 4, Apr 72, pp 62-64

Abstract: In the paper are presented the results of an investigation of the refraction indexes of quartz glass obtained by various methods, from raw materials originating from various deposits. It is found that the value of the refraction index of quartz glass is determined mainly by the technology of its production, and depends practically not at all upon the initial materials. One table.

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1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--OPTICAL CONSTANTS, LUMINESCENCE, AND INDUCED RADIATION OF LANTHANUM
NIORATE SINGLE CRYSTALS ACTIVATED BY NEODYMIUM -U-
AUTHOR--(05)-BAKHSHIYEVA, G.F., KARAPETIAN, V.YE., MOROZOV, A.M., MOROZOVA,
L.G., TOLSTOY, M.N. *B*
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SUBJECT AREAS--MATERIALS
TOPIC TAGS--SINGLE CRYSTAL, OPTIC PROPERTY, THERMAL EFFECT, LUMINESCENCE,
ANISOTROPY, LANTHANUM COMPOUND, NIOBATE, CRYSTAL STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
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2/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0049477
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LANBO SUB4 SINGLE CRYSTALS DIAM.
8-15, LENGTH 70 MM WERE ISOLATED FROM THE MELT AFTER HIGH TEMP.
TREATMENT OF LANBO SUB4 IN INERT ATM. UNACTIVATED CRYSTALS AND CRYSTALS
ACTIVATED WITH 1 MOLE PERCENT ND PRIME3 POSITIVE WERE STUDIED.
UNACTIVATED CRYSTALS ARE TRANSPARENT IN THE RANGE 0.27-6.5MU; THE LIGHT
ABSORPTION IN THE RANGE 6.5-9.0 MU CORRESPONDS TO THE VIBRATIONAL
FREQUENCIES OF NBO SUB4 TETRAHEDRONS. N WAS OBTAINED AT 5 WAVELENGTHS
IN THE RANGE 435.8-656.3 MMU. STRONG BIREFRINGENCE WAS OBSD.
ACTIVATION OF THE SINGLE CRYSTALS WITH ND PRIME3 POSITIVE CAUSED STRONG
ANISOTROPY OF THE CRYSTALS. LUMINESCENCE SPECTRA WERE RUN AT
77DEGREESK. THE LUMINESCENCE DURATION WAS 120 MUSEC AT ROOM TEMP.; IT
DID NOT CHANGE ON HEATING OF THE ACTIVATED SINGLE CRYSTAL TO 250DEGREES.
THREE AXIAL ELLIPSOIDS WERE CONSTRUCTED FOR THE SEP. LINES IN THE
LUMINESCENCE SPECTRA OF LANBO SUB4 MINUS ND PRIME3 POSITIVE SCANNED IN
POLARIZED LIGHT. GENERATION OF FORCED RADIATION OCCURRED IN THE
ACTIVATED SINGLE CRYSTALS AT A SINGLE FREQUENCY, 1.0624 MU. SHIFT TO
1.0622 MU OCCURRED ON HEATING OF THE CRYSTAL TO 300DEGREES.

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1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70
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NIOBATE SINGLE CRYSTALS ACTIVATED BY NEODYMIUM -U-
AUTHOR-(05)-BAKHSHIYEVA, G.F., KARAPETYAN, V.YE., MOROZOV, A.M., MOROZOVA,
L.G., TOLSTOY, M.N.
COUNTRY OF INFO--USSR

B

SOURCE--OPT. SPEKTROSK. 1970, 28(1), 76-81

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SINGLE CRYSTAL, OPTIC PROPERTY, THERMAL EFFECT, LUMINESCENCE,
ANISOTROPY, LANTHANUM COMPOUND, NIOBATE, CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

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UDALOV, Yu. F., GARASHOV, B. N., and BAKHTADZE

"Value of Introducing Supplementary Vitamins Into the Diet of Persons Doing Emotionally Tense Work in Correcting Unbalanced Lipid Metabolism"

Moscow, Voprosy Pitaniya, No 1, 1973, pp 17-23

Abstract: Systematic administration of vitamins A (2 mg), C (100 mg), B₁ (3 mg), B₂ (3 mg), and PP (10 mg) for 10 to 25 days to 114 airplane pilots, some of whom showed signs of incipient atherosclerosis, had beneficial effects on various indexes of lipid and protein metabolism while improving the vitamin levels. In those with atherosclerosis, prophylactic vitaminization lowered the cholesterol level, increased the lecithin-cholesterol coefficient, lowered the content of beta lipoproteins, and increased the plasma proteins. The sense of well-being improved in both groups, especially those with atherosclerosis, and their work capacity increased. Some positive changes were also noted on the EKG taken at the end of vitaminization. There were no changes in lipid or protein metabolism among the 117 pilots not given supplementary vitamins.

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UDALOV, Yu. F., BAKHTADZE, N. N., and GARASHOV, B. N.

"Prevention of Disturbances of Lipid Metabolism in Individuals Working Under High Nervous Tension"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 2, 1973, pp 54-56

Abstract: Examination of 440 pilots revealed disturbances of lipid metabolism (hypercholesterolemia, abnormal lecithin: cholesterol ratio, etc.) in a substantial number of cases, especially in individuals age 32 to 35. The longer the flying time, the more pronounced the hypercholesterolemia. Temporary periods on the ground, e.g., while the men were in hospitals undergoing fitness examinations, did not result in swift normalization. Two vitamin complexes were tested as possible prophylactic agents. One consisting of vitamins A, B₁, B₂, PP, and C lowered the cholesterol level, content of beta lipoproteins, and improved the lecithin: cholesterol ratio in 56 pilots. The other complex consisting of vitamins A, E, B₁, B₂, PP, B₆, pantothenic acid, folic acid, B₁₂, C, and P was even more efficacious in 57 pilots, restoring normal lipid levels in 20 to 30 days, in a few cases several days earlier (day 15) or much later (day 60). Vitamin supplements plus the systematic alternation of work and rest will help to prevent disturbances of lipid metabolism in persons working under stress and thereby reduce the incidence of atherosclerosis.

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